

FIG. 2

FIG. 2

FIG. 3

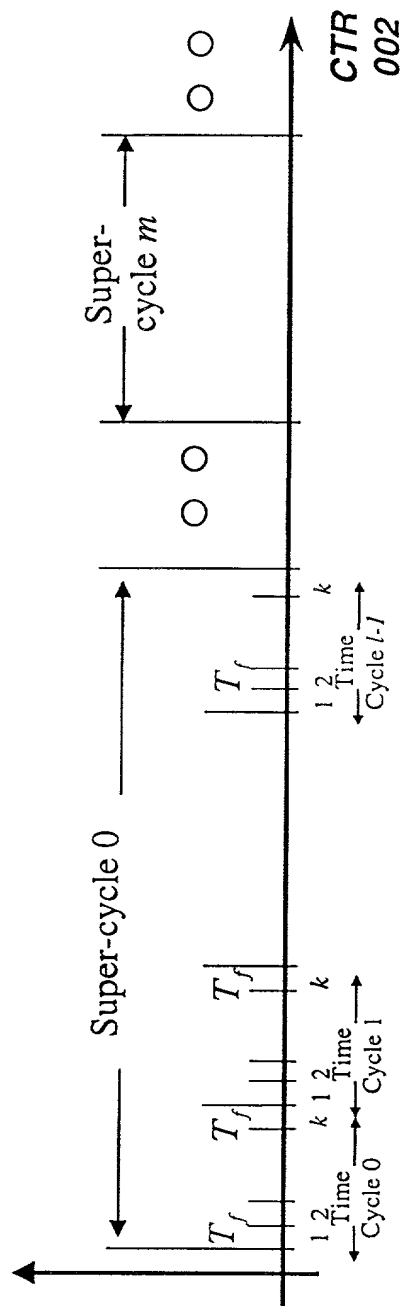


FIG. 4

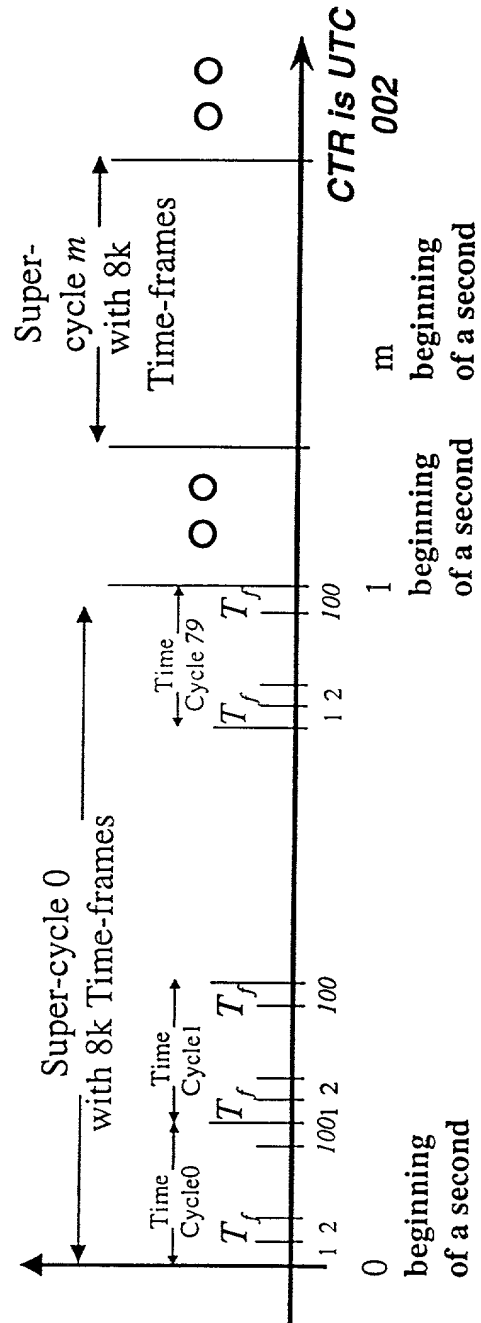


FIG. 5

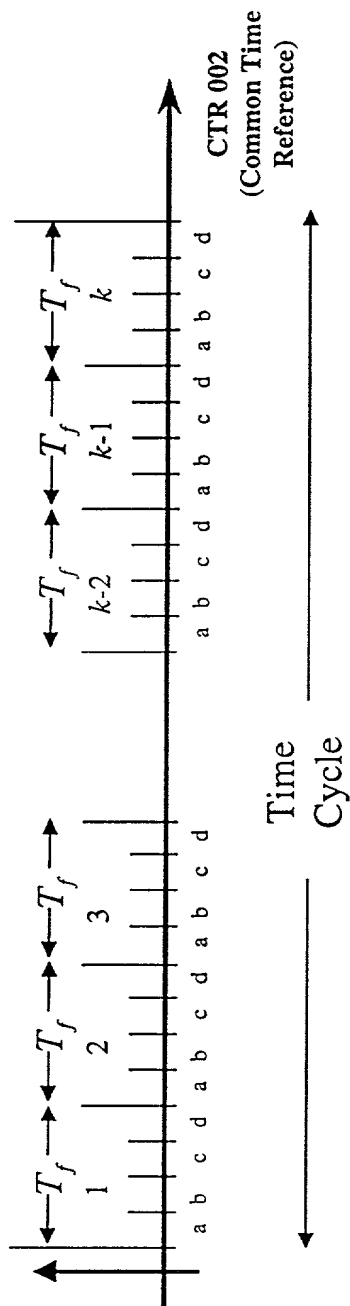
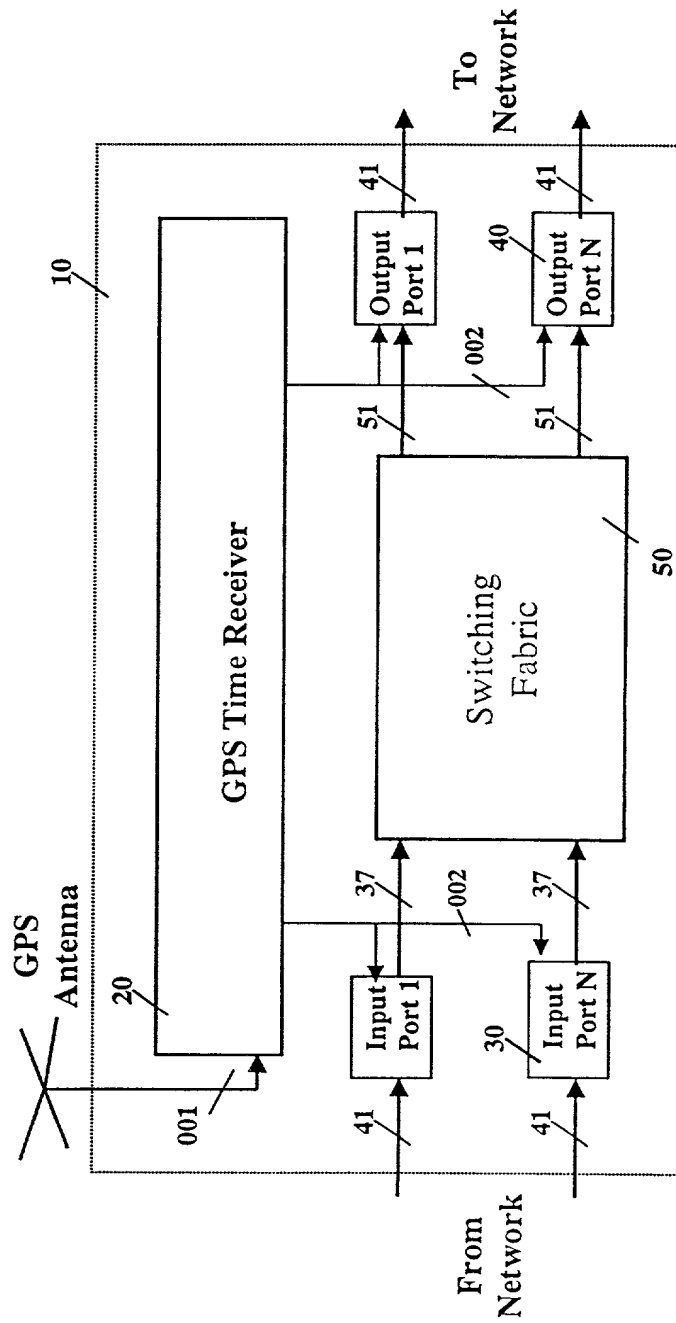


FIG. 6



T00040" 99326860

FIG. 7

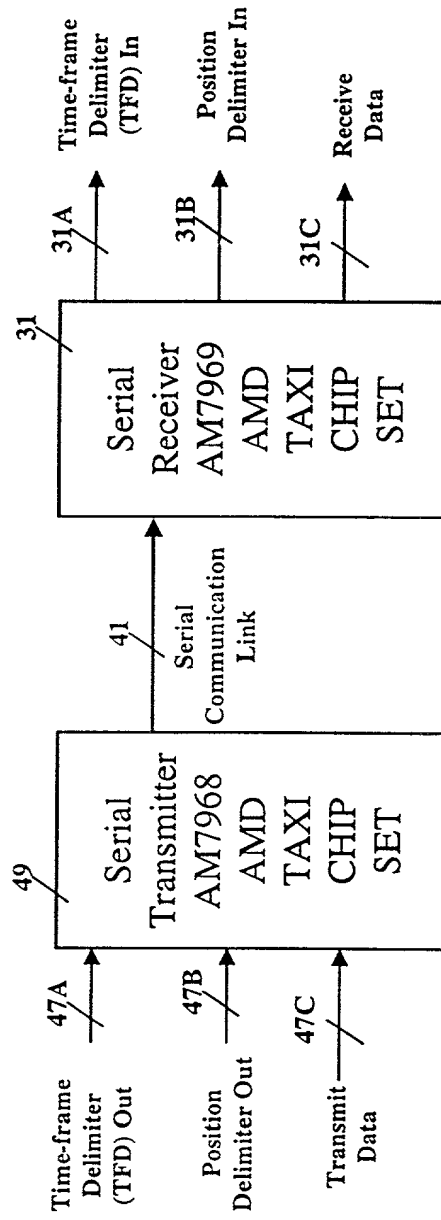


FIG. 8

FIG. 8

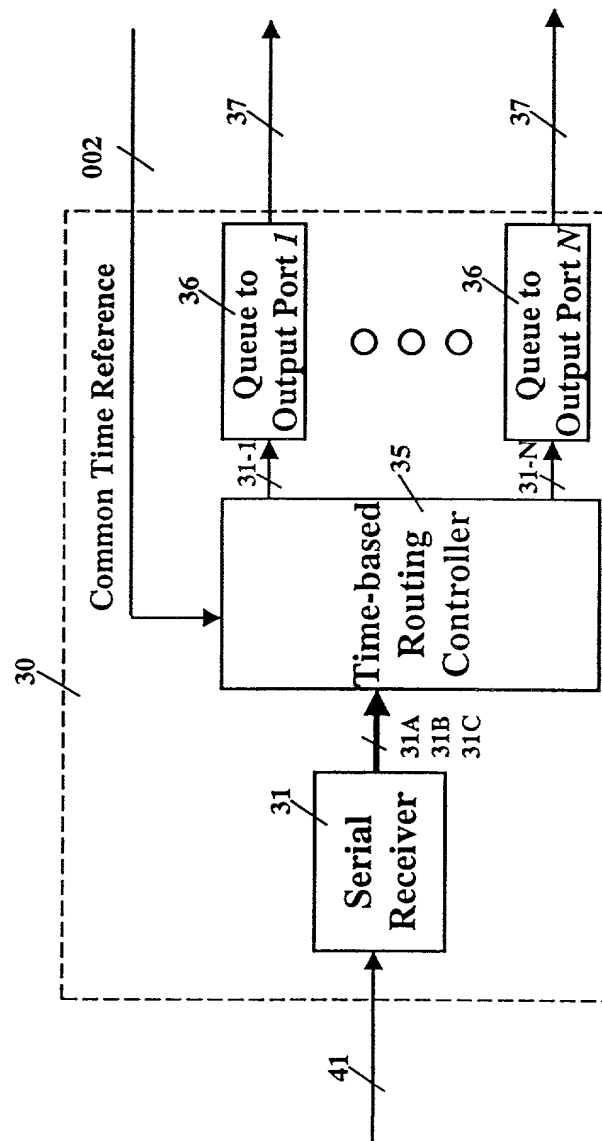
4B/5B encoding scheme		
HEX DATA	4-bit Binary Data	5-bit Encoded Data Codeword
0	0000	11110
1	0001	01001
2	0010	10100
3	0011	10101
4	0100	01010
5	0101	01011
6	0110	01110
7	0111	01111
8	1000	10010
9	1001	10011
A	1010	10110
B	1011	10111
C	1100	11010
D	1101	11011
E	1110	11100
F	1111	11101

4B/5B encoding scheme			
Control Input		10-bit Encoded Control Codeword	
HEX DATA	Binary Data		
1	0001	11111	11111
2	0010	01101	01101
3	0011	01101	11001
4	0100	11111	00100
5	0101	01101	00111
6	0110	11001	00111
7	0111	11001	11001
8	1000	00100	00100
9	1001	00100	11111
A	1010	00100	00000
B	1011	00111	00111
C	1100	00111	11001
D	1101	00000	00100
E	1110	00000	11111
F	1111	00000	00000

FIG. 9

FIG. 9a: 4B/5B encoding scheme

FIG. 10



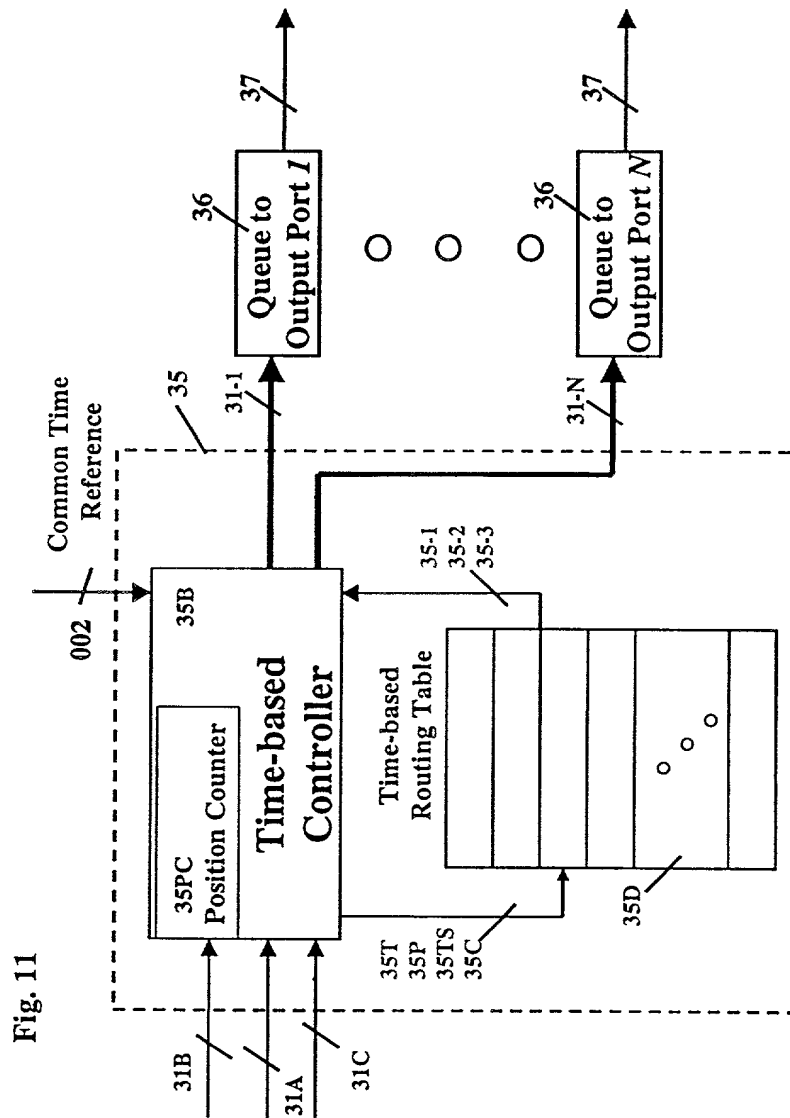


Fig. 12

35-1	35-2	35-3
OUTPUT PORT	OUT-GOING TIME-FRAME	POSITION IN OUT-GOING TIME-FRAME
5	$t+4 \bmod k$	a
1	$t+3 \bmod k$	d
4	$t+5 \bmod k$	b
3	$t+3 \bmod k$	d

35D

Time-frame of Arrival
(TOA) 35T,
Position Counter 35P

35C

(A) Without a time-stamp

Payload	P	PID	

Position in Out-going Time-frame
35-3

Out-going Time-frame
35-2

(B) With a time-stamp

Payload	Time-stamp	P	PID

Position in Out-going Time-frame
35-3

Out-going Time-frame
35-2

Given at:

(1) the source, or
(2) the PT sub-network boundary

FIG. 14

• Real-time protocol (RTP) with the following fields in the header:

- version (V) - 2 bits
- padding (P) - 1 bit
- extension (X) - 1 bit
- CSRC count (CC) - 4 bits
- marker (M) - 1 bit
- payload type - 7 bits
- sequence number - 16 bits
- times-tamp - 32 bits

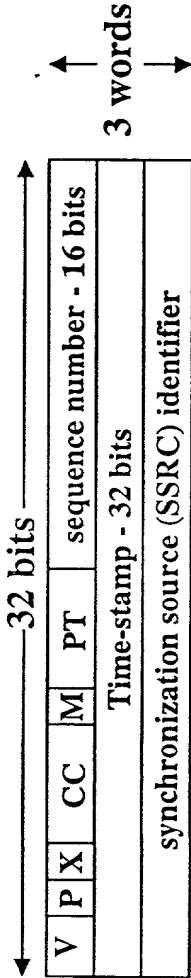


FIG. 15

FIG. 15

35-1	35-2	35-3
OUTPUT PORT	OUT-GOING TIME-FRAME	POSITION IN OUT-GOING TIME-FRAME
5	$t+4 \bmod k$	a
1	$t+3 \bmod k$	d
4	$t+5 \bmod k$	b
3	$t+3 \bmod k$	d

35D

Position Counter 35P,
Time Stamp 35TS,
Virtual Pipe ID (PID) 35C

35C

```

graph TD
    Start(( )) --> 35-01{35-01  
Receive TFD from the  
serial receiver 31  
at t2}
    35-01 -- Y --> 35-04[35-04  
Reset the position counter  
35P:=0  
Let t1 be the time of  
the last CTR 002 tick;  
Set the TOA 35T,  
such that,  
if (t2+Dconst) - t1 > 0, then  
35T := CTR, else  
35T := CTR+1]
    35-01 -- N --> 35-02{35-02  
Receive Position  
Delimiter}
    35-04 --> 35-02
    35-02 -- Y --> 35-05[35-05  
Increment the  
position counter 35P:=35P+1]
    35-02 -- N --> 35-03{35-03  
Receive  
data packet from the  
serial receiver 31}
    35-05 --> 35-03
    35-03 -- Y --> 35-06[35-06  
Use the position counter 35T, 35P to look-up  
in the time-based routing table 35D :  
•the output port 35-1 and store the  
received packet in the queue to this  
output port 36,  
•the out-going time-frame 35-2, and  
• the position of the out-going packet  
within the out-going time-frame 35-3.]
    35-03 -- N --> End(( ))
    
```

Use the position counter 35T, 35P to look-up in the time-based routing table 35D :

- the output port 35-1 and store the received packet in the queue to this output port 36,
- the out-going time-frame 35-2, and
- the position of the out-going packet within the out-going time-frame 35-3.

FIG. 17

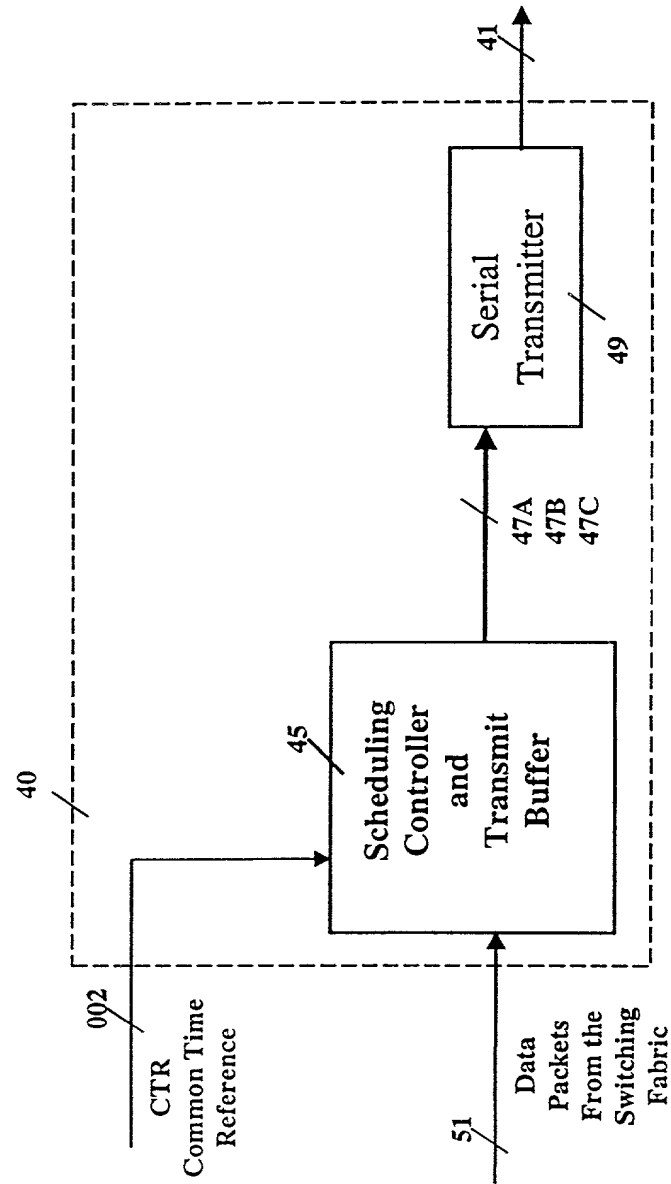


FIG. 18

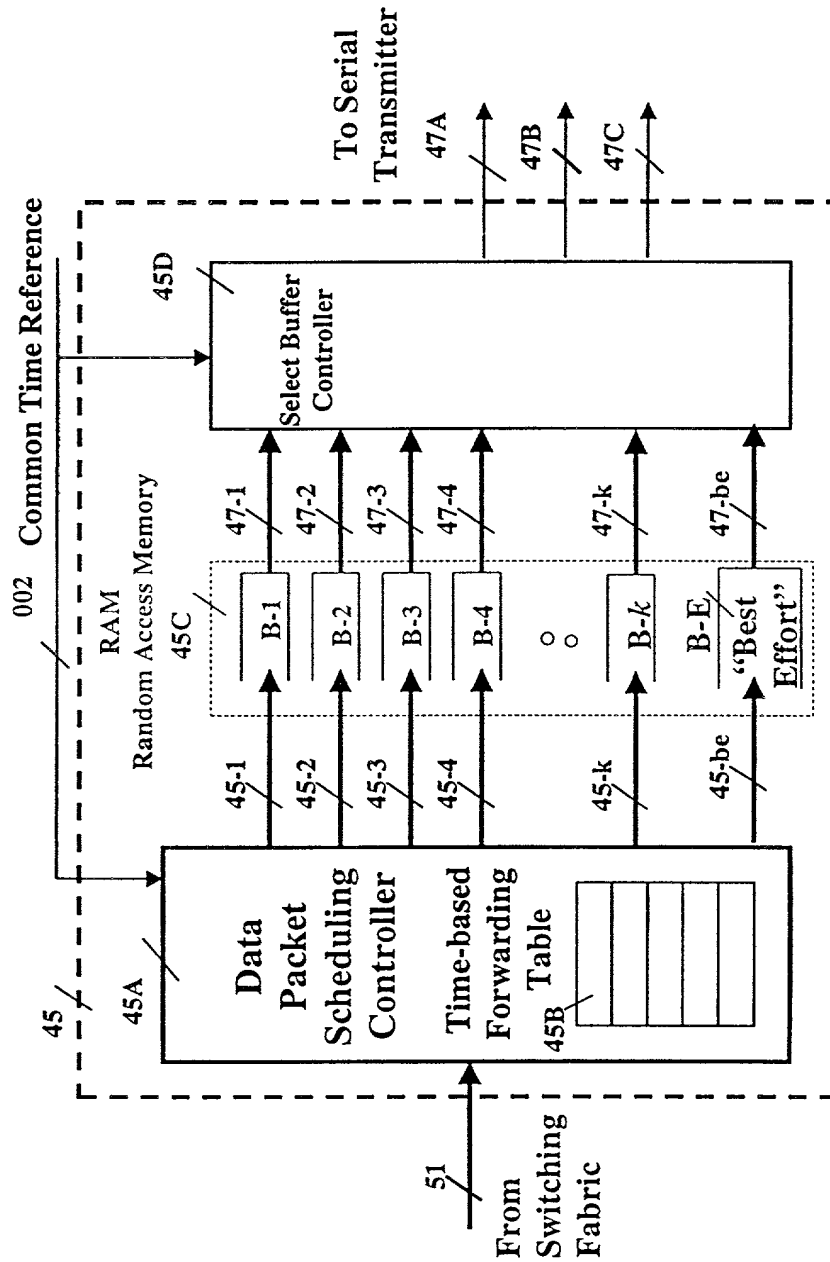
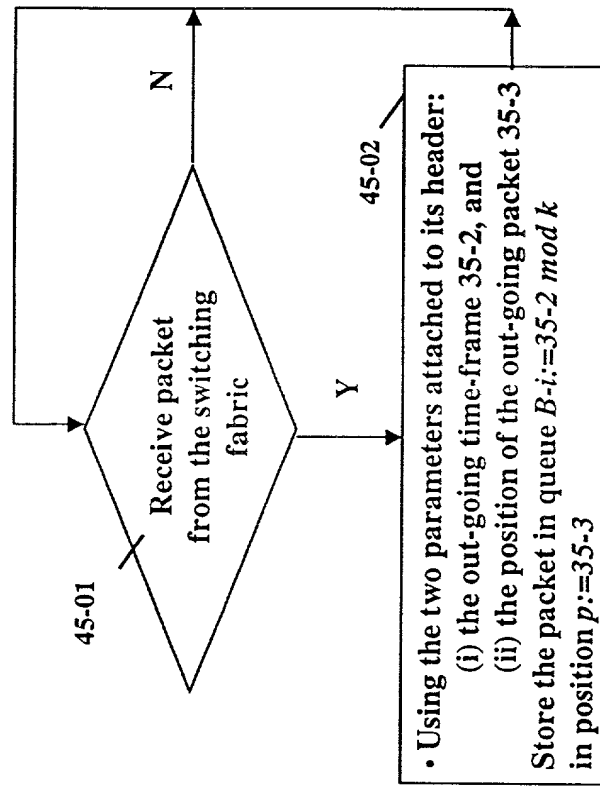


Fig. 19



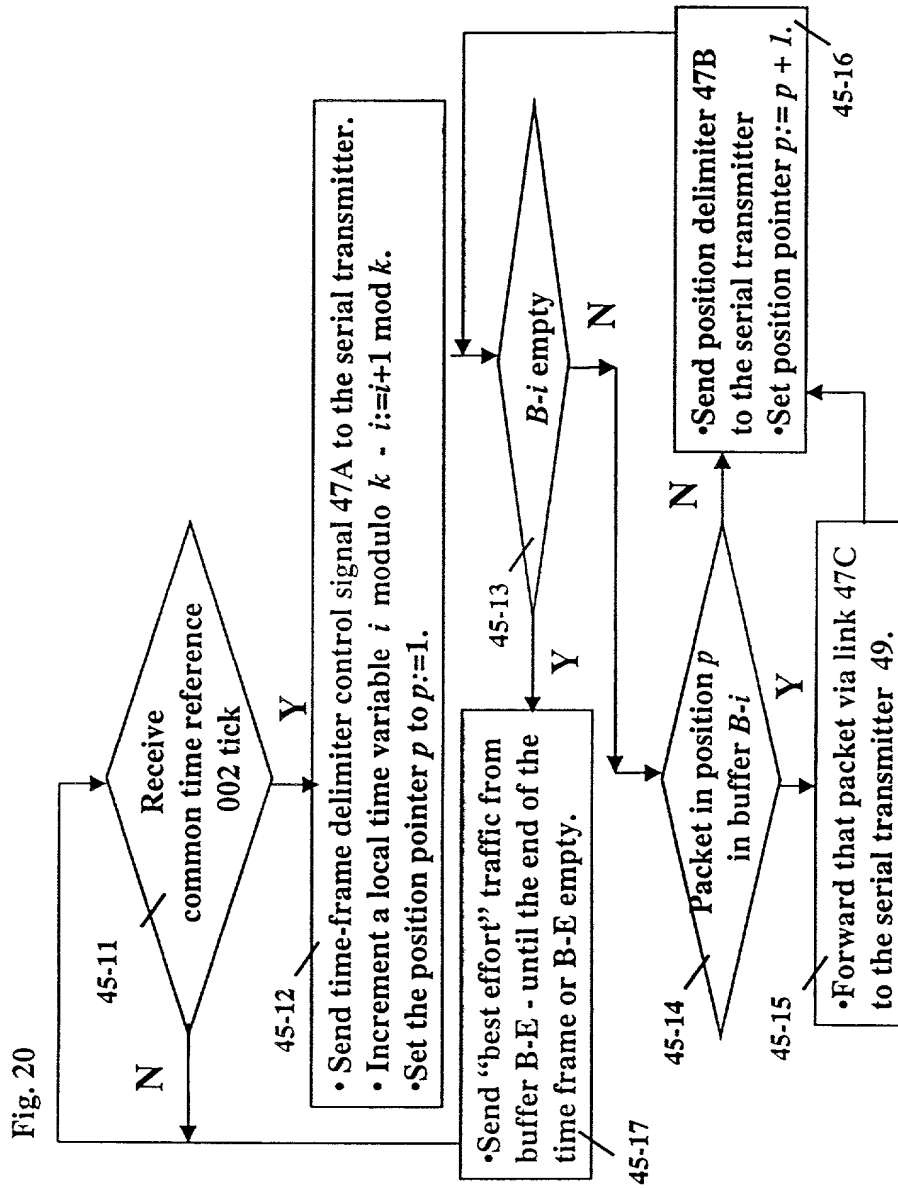


FIG. 21

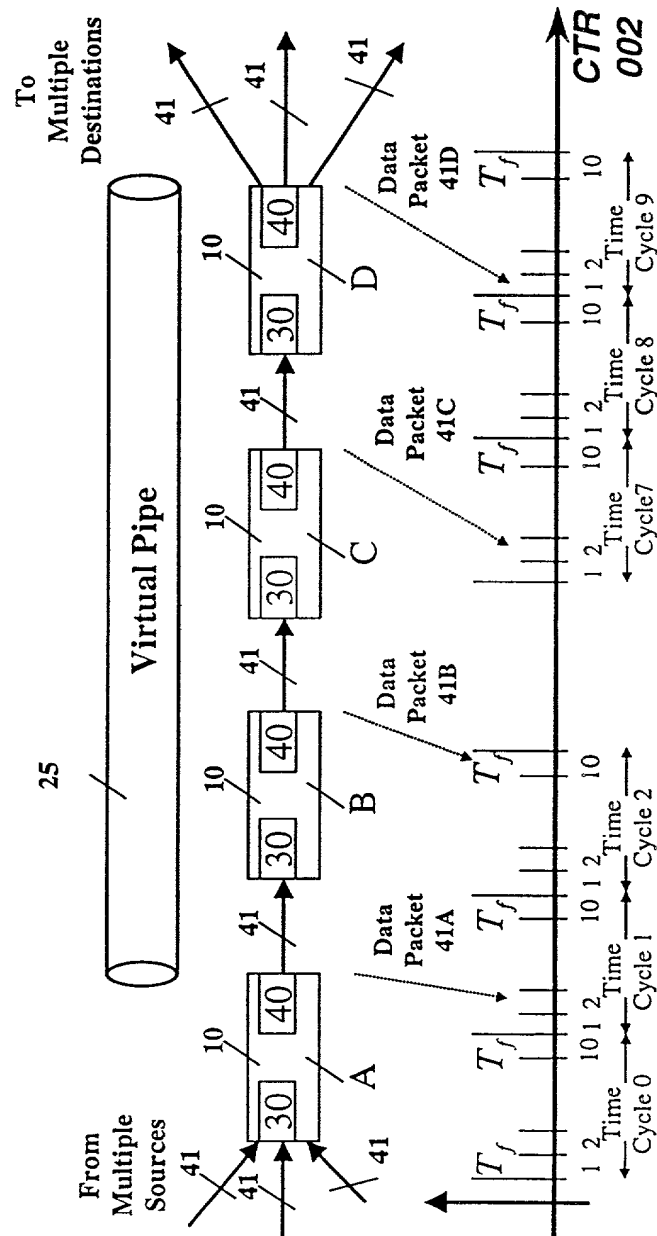


FIG. 22

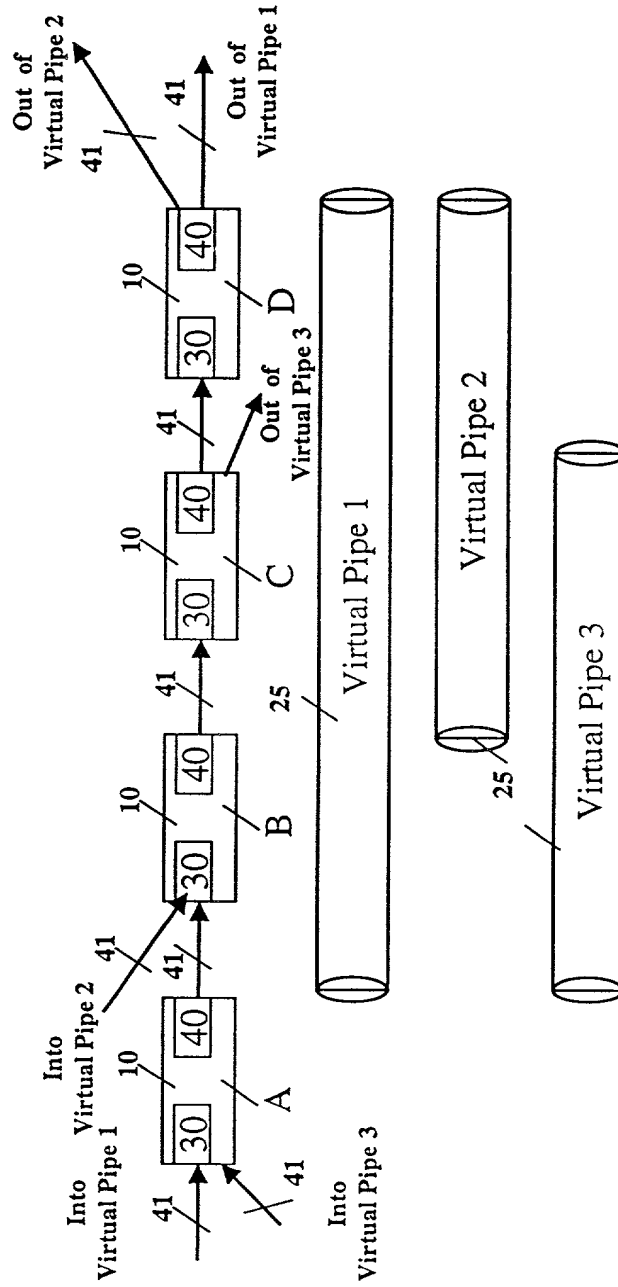


FIG. 23

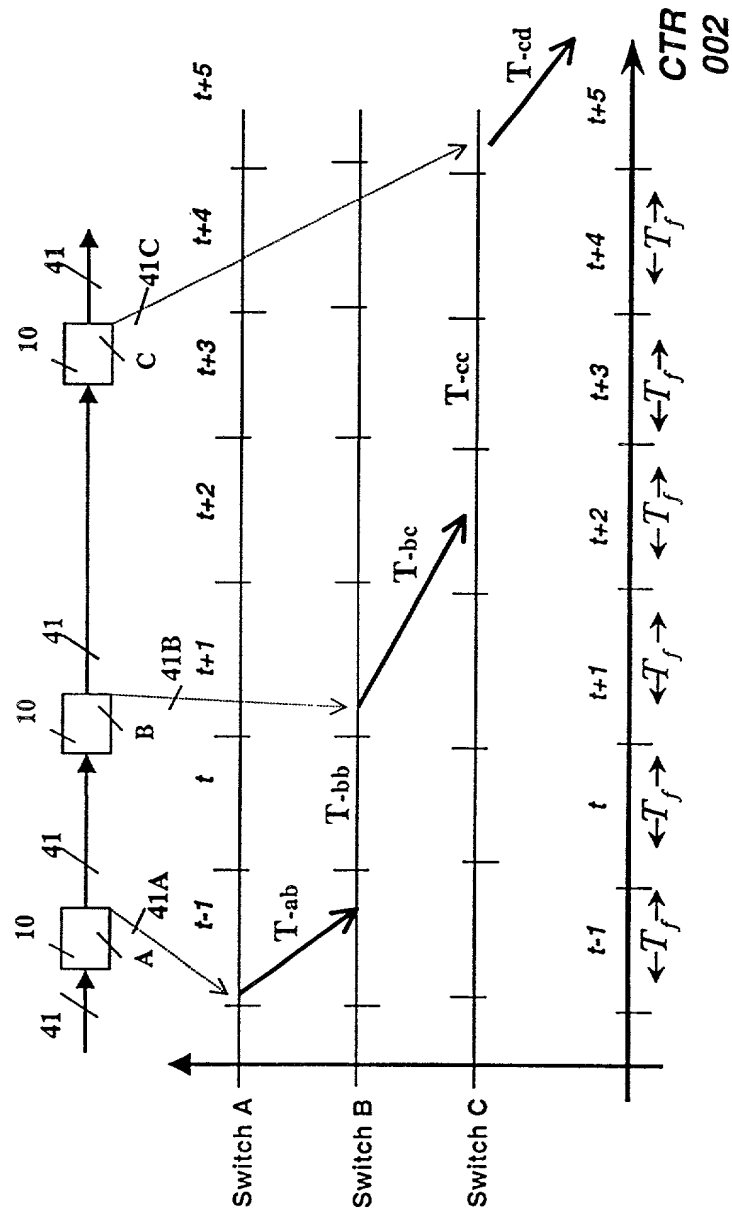


FIG. 24

